



## A FEATURES

- Multilayer construction with ultra-low profile
- Suitable for applications with high currents up to 1.8A
- High saturation current up to 1.6A
- Magnetically shielded construction
- Operating Temperature range from -40°C to +125°C (Including Self-heating)
- 260°C reflow peak temperature qualified

## B PART NUMBER SYSTEM

$\underline{1MK}$     $\underline{2012}$    -    $\underline{100}$     $\underline{M}$     $\underline{F}$   
 ①            ②            ③            ④            ⑤

①	Series	②	Dimension Code (L*W*H) (mm)		
1MK	Series Code		160805(1.6×0.8×0.5)	160809(1.6×0.8×0.9)	201206(2.0×1.25×0.5)
			201210(2.0×1.25×0.9)	201214(2.0×1.25×1.25)	201610(2.0×1.6×0.9)
			201612(2.0×1.6×1.1)	252010(2.5×2.0×0.9)	252012(2.5×2.0×1.1)
③	Inductance Code	④	Inductance Tolerance		
e.g.	Calculation	M	±20%		
2R2	2.2μH	⑤	RoHS Compliant		
100	$10 \times 10^0 \mu\text{H} = 10\mu\text{H}$				
101	$10 \times 10^1 \mu\text{H} = 100\mu\text{H}$				

## C DRAWINGS AND DIMENSIONS

Drawing	Schematic
<p>Land Pattern</p>	

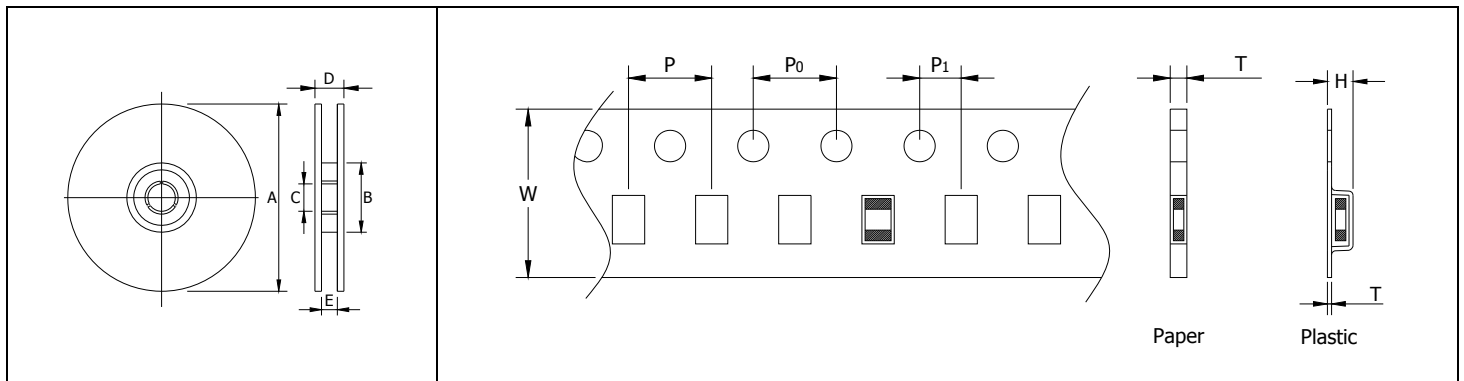
Case Size	Dimensions (mm)						
	A	B	C	D	H <sub>ref.</sub>	I <sub>ref.</sub>	J <sub>ref.</sub>
1MK160805	1.6±0.15	0.8±0.15	0.5±0.05	0.3±0.2	1.0	0.55	0.7
1MK160809	1.6±0.15	0.8±0.15	0.8±0.15	0.3±0.2	1.0	0.55	0.7
1MK201206	2.0±0.2	1.25±0.2	0.5±0.1	0.5±0.3	1.45	0.7	0.8
1MK201210	2.0±0.2	1.25±0.2	0.9±0.1	0.5±0.3	1.45	0.7	0.8
1MK201214	2.0±0.2	1.25±0.2	1.25±0.1	0.5±0.3	1.45	0.7	0.8
1MK201610	2.0±0.2	1.6±0.2	0.9±0.1	0.5±0.3	1.8	0.8	0.8
1MK201612	2.0±0.2	1.6±0.2	1.1±0.1	0.5±0.3	1.8	0.8	0.8
1MK252010	2.5±0.2	2.0±0.2	0.9±0.1	0.5±0.3	2.2	0.8	1.2
1MK252012	2.5±0.2	2.0±0.2	1.1±0.1	0.5±0.3	2.2	0.8	1.2

## D SPECIFICATIONS

Part Number	Inductance		DCR			SRF <sub>min</sub>	
	μH	Tolerance	Typ.(Ω)	Max.(Ω)	I <sub>rms</sub> (A)	Isat(A)	MHz
1MK160805-R22MF	0.22	±20%	0.120	0.150	1.20	1.45	180
1MK160805-R33MF	0.33	±20%	0.160	0.200	1.10	1.35	140
1MK160805-R47MF	0.47	±20%	0.180	0.225	1.15	1.05	120
1MK160805-R68MF	0.68	±20%	0.220	0.275	0.90	0.80	100
1MK160805-1R0MF	1.0	±20%	0.320	0.400	0.80	0.70	90
1MK160809-R22MF	0.22	±20%	0.100	0.125	1.25	1.60	200
1MK160809-R33MF	0.33	±20%	0.130	0.162	1.20	1.50	190
1MK160809-R47MF	0.47	±20%	0.150	0.187	1.10	1.20	180
1MK160809-R68MF	0.68	±20%	0.180	0.225	1.15	1.10	160
1MK160809-1R0MF	1.0	±20%	0.200	0.250	1.00	0.80	125
1MK160809-1R5MF	1.5	±20%	0.230	0.285	0.90	0.50	100
1MK160809-2R2MF	2.2	±20%	0.300	0.375	0.85	0.30	80
1MK201206-R47MF	0.47	±20%	0.120	0.150	1.10	1.30	80
1MK201206-1R0MF	1	±20%	0.190	0.237	0.80	0.70	40
1MK201206-1R5MF	1.5	±20%	0.260	0.325	0.70	0.50	35
1MK201206-2R2MF	2.2	±20%	0.320	0.400	0.60	0.35	30
1MK201210-R47MF	0.47	±20%	0.080	0.100	1.50	1.20	100
1MK201210-1R0MF	1	±20%	0.110	0.137	1.30	1.15	60
1MK201210-1R5MF	1.5	±20%	0.160	0.200	1.10	0.80	50
1MK201210-2R2MF	2.2	±20%	0.200	0.250	0.90	0.60	40
1MK201210-3R3MF	3.3	±20%	0.200	0.250	0.90	0.35	30
1MK201210-4R7MF	4.7	±20%	0.250	0.312	0.80	0.28	30
1MK201214-4R7MF	4.7	±20%	0.400	0.500	0.75	0.63	20
1MK201214-6R8MF	6.8	±20%	0.300	0.375	1.00	0.25	45
1MK201214-100MF	10	±20%	0.300	0.375	1.00	0.13	35
1MK201610-R47MF	0.47	±20%	0.080	0.100	1.50	1.60	100
1MK201610-1R0MF	1	±20%	0.090	0.112	1.40	1.20	70
1MK201610-1R5MF	1.5	±20%	0.110	0.137	1.20	0.70	60
1MK201610-2R2MF	2.2	±20%	0.110	0.137	1.20	0.50	50
1MK201610-3R3MF	3.6	±20%	0.120	0.150	1.20	0.33	40
1MK201610-4R7MF	4.7	±20%	0.140	0.175	1.10	0.22	30
1MK201612-6R8MF	6.8	±20%	0.170	0.212	1.20	0.22	40
1MK201612-100MF	10	±20%	0.250	0.312	1.10	0.20	35
1MK252010-R47MF	0.47	±20%	0.040	0.050	1.80	1.50	105
1MK252010-1R0MF	1	±20%	0.060	0.075	1.60	1.40	70
1MK252010-1R5MF	1.5	±20%	0.070	0.087	1.50	1.20	65
1MK252010-2R2MF	2.2	±20%	0.200	0.250	1.20	1.50	60
1MK252010-3R3MF	3.3	±20%	0.250	0.312	1.10	1.20	55
1MK252010-4R7MF	4.7	±20%	0.380	0.475	0.90	0.75	35
1MK252010-6R8MF	6.8	±20%	0.450	0.562	0.75	0.35	30
1MK252010-100MF	10	±20%	0.500	0.625	0.70	0.25	25
1MK252012-1R0MF	1	±20%	0.085	0.106	2.10	2.10	85
1MK252012-2R2MF	2.2	±20%	0.250	0.312	1.10	1.60	50
1MK252012-3R3MF	3.3	±20%	0.250	0.312	1.10	1.25	50
1MK252012-4R7MF	4.7	±20%	0.400	0.500	0.90	0.80	35
1MK252012-6R8MF	6.8	±20%	0.500	0.625	0.80	0.75	30
1MK252012-100MF	10	±20%	0.500	0.625	0.80	0.50	25

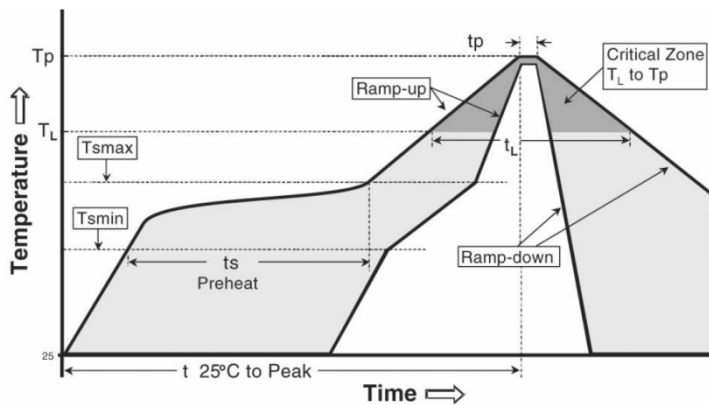
1. Inductance measured @ 1MHz at 25°C temperature.
2. DCR measured @ 25°C.
3. I<sub>rms</sub>: DC current for an approximate 40°C rise from 20°C ambient temperature.
4. Isat: DC Current for approximate 30% roll off at 25°C.
5. Specifications subject to change without notice please check our website for latest information.

**E TAPE AND REEL SPECIFICATIONS**



Case Size	Carrier	Parts per Reel	Reel Dimensions(REF)					Tape Dimensions(REF)					
			A	B	C	D	E	W	P	P <sub>0</sub>	P <sub>1</sub>	T <sub>max</sub>	H
1MK160805	Paper	5000	178	58	13	13	9.0	8	4	4	2	0.7	/
1MK160809	Paper	4000	178	58	13	13	9.0	8	4	4	2	1.1	/
1MK201206	Paper	5000	178	58	13	13	9.0	8	4	4	2	0.8	/
1MK201210	Plastic	3000	178	58	13	13	9.0	8	4	4	2	0.3	1.45
1MK201214	Plastic	3000	178	58	13	13	9.0	8	4	4	2	0.3	1.80
1MK201610	Plastic	3000	178	58	13	13	9.0	8	4	4	2	0.3	1.45
1MK201612	Plastic	3000	178	58	13	13	9.0	8	4	4	2	0.3	1.60
1MK252010	Plastic	3000	178	58	13	13	9.0	8	4	4	2	0.3	1.45
1MK252012	Plastic	3000	178	58	13	13	9.0	8	4	4	2	0.3	1.60

**F RECOMMENDED SOLDER REFLOW PROFILE**



Profile Feature	Recommended Conditions
Average ramp-up rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second max.
Preheat	
Temperature Min (T <sub>smin</sub> )	100°C
Temperature Max (T <sub>smax</sub> )	150°C
Time (T <sub>smin</sub> to T <sub>smax</sub> )(t <sub>s</sub> )	60-180 seconds
Time maintained above:	
Temperature (T <sub>L</sub> )	217°C
Time (t <sub>L</sub> )	60-150 seconds
Peak Temperature (T <sub>p</sub> )	See Table2
Time within 5°C of actual Peak Temperature (t <sub>p</sub> ) <sup>2</sup>	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max

Table 1

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350 - 2000	Volume mm <sup>3</sup> >2000
< 1.6mm	260°C	260°C	260°C
1.6mm - 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Table 2

1. The above profiles are based on IPC/JEDEC J-STD-020C.
2. Exceeding these conditions may cause lowered product reliability.